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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/816,978	MATSUMOTO, KAZUHIKO	
	Examiner	Art Unit	
	KATRINA FUJITA	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 June 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Office Action is responsive to Applicant's remarks received on June 06, 2008. Claims 1-36 remain pending.

Specification

2. The previous specification objection is withdrawn in light of Applicant's amendment.

Claim Objections

3. The previous claim objection is withdrawn in light of Applicant's amendment.

4. The following is a quotation of 37 CFR 1.75(a):

> The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

5. Claim 1 is objected to under 37 CFR 1.75(a), as failing to particularly point out and distinctly claim the subject matter which application regards as his invention or discovery.

Claim 1 lacks antecedent basis for "said specifying unit" in line 7. The following will be assumed for examination purposes: -- said region specifying unit --.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-13, 15-31 and 33-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Suri et al. (US 6,842,638).

Regarding **claim 1**, Suri et al. discloses a medical image processing apparatus for generating a medical image (“apparatus is disclosed for producing an angiographic image representation of a subject" at col. 2, line 64) by using three-dimensional volume data representing a portion in a living body (“three-dimensional gray scale image representation of the examined area of the patient" at col. 7, line 58), said apparatus comprising:

a volume data obtaining unit (figure 4, numeral 40) which obtains predetermined three-dimensional volume data including a tubular tissue ("the carotid area of the patient 42 is imaged" at col. 7, line 40);

a region specifying unit (figure 15, numeral 370) which specifies a region ("two-dimensional edge volume slices" at col. 15, line 43) including a position on the tubular tissue ("vessel contours" at col. 15, line 52) in the three-dimensional volume data, at each of a plurality of such positions ("cycling through the slices" at col. 16, line 16) as said region specifying unit specifies a planar region which orthogonally intersects with the longitudinal direction of the tubular tissue (figure 6B);

an extraction unit (portion of figure 5, numeral 70 that produces figures 6A-6C) which extracts information on the tubular tissue in each of the specified regions (figure 16, numeral 400);

a center specifying unit (figure 16, numeral 400) for specifying a center position of a cross section of the tubular tissue in each of the plurality of regions specified by said region specifying unit (figure 16, numeral 402); and

a medical image generating unit (figure 4, numeral 54) which generates a medical image representing the tubular tissue, based on the information extracted by said extraction unit ("segmented vascular information is preferably graphically displayed on an appropriate user interface 54, typically as a two-dimensional or three-dimensional graphical image representation" at col. 8, line 33).

Regarding **claim 2**, Suri et al. discloses an apparatus wherein:

each of the plurality of regions are specified by said region specifying unit (figure 16, numeral 402) based on the three-dimensional volume data obtained by the volume data obtaining unit (the 3-D edge volume is derived from the volume data acquired beforehand); and

a center line specifying unit (figure 5, numeral 86) which specifies a center line of the tubular tissue in a longitudinal direction of the tubular tissue, based on the plurality of center positions specified by said center specifying unit ("a three dimensional segmented vasculature 96 can be constructed, e.g. by interpolation between the planes 124 and along the vessel centers 126" at col. 9, line 62).

Regarding **claim 3**, Suri et al. discloses an apparatus wherein:

said region specifying unit sequentially specifies regions along the tubular tissue ("divide 370 the three-dimensional edge volume 80 into two-dimensional edge volume slices" at col. 15, line 42); and

said center specifying unit specifies a center of a cross section of the tubular tissue in each of the regions sequentially specified by said region specifying unit ("Each slice 376 is selected 374 for processing in turn" at col. 15, line 44).

Regarding **claim 4**, Suri et al. discloses an apparatus wherein:

said center specifying unit specifies a center position of a cross section of the tubular tissue in the planar region specified by said region specifying unit (figure 6B, numeral 120).

Regarding **claim 5**, Suri et al. discloses an apparatus wherein said extraction unit includes:

a unit (figure 16, numeral 400) which obtains a median point represented by the three-dimensional volume data, of the tubular tissue in each of the plurality of regions specified by said region specifying unit (figure 6A, numeral 102);

a cross sectional image generation unit (figure 5, numeral 86) which generates a cross sectional image representing a cross section of the tubular tissue at a position of the median point obtained by said unit for obtaining a median point (“analyzes the orthogonal plane 94 to determine the vessel boundaries 120" at col. 9, line 56); and

a center specifying unit (figure 16, numeral 84) which specifies a center position of the cross section in the three-dimensional volume data, based on the generated cross sectional image (“set of vessel centers and overlap tags 84 is generated that is representative of the imaged vascular system” at col. 16, line 17).

Regarding **claim 6**, Suri et al. discloses an apparatus further comprising a designation reception unit (figure 23, numeral 610) which receives designation for two arbitrary points on the tubular tissue represented by the three-dimensional volume data ("starting point" at col. 17, line 58 and a subsequent point as "The process is repeated 618, by selecting 612 a new point 614" at col. 18, line 14),

wherein:

said region specifying unit sequentially specifies planar regions which orthogonally intersect with the longitudinal direction of the tubular tissue (“divide 370 the three-dimensional edge volume 80 into two-dimensional edge volume slices” at col. 15, line 42), at a plurality of positions between the two points along the tubular tissue (the

final designated point will have a number of planar regions between it and the initial starting point); and

said center specifying unit specifies a center of a cross section of the tubular tissue in each of the plurality of planar regions specified by said region specifying unit ("Each slice 376 is selected 374 for processing in turn" at col. 15, line 44).

Regarding **claim 7**, Suri et al. discloses an apparatus wherein:

said designation reception unit receives designation for a planar region which orthogonally intersects with the longitudinal direction of the tubular tissue, at one of the two designated points ("finding the extent of the vessel about the vessel center in the plane orthogonal to the vessel direction" at col. 17, line 67);

said region specifying unit sequentially specifies points which are apart from one another by a predetermined distance in a direction heading from the one point to the other point of the two points along the tubular tissue ("selecting 612 advantageously moves a pre-selected distance along the vessel direction" at col. 18, line 15), and sequentially specifies planar regions orthogonally intersecting with the longitudinal direction of the tubular tissue at each of the specified points ("divide 370 the three-dimensional edge volume 80 into two-dimensional edge volume slices" at col. 15, line 42);

said center specifying unit specifies a center position of a cross section of the tubular tissue in each of the plurality of planar regions specified by said region specifying unit ("Each slice 376 is selected 374 for processing in turn" at col. 15, line 44); and

said center line specifying unit specifies a center line of the tubular tissue in the longitudinal direction of the tubular tissue, based on the plurality of center positions specified by said center specifying unit ("a three dimensional segmented vasculature 96 can be constructed, e.g. by interpolation between the planes 124 and along the vessel centers 126" at col. 9, line 62).

Regarding **claim 8**, Suri et al. discloses an apparatus wherein:

the three-dimensional volume data includes three-dimensional coordinate information ("count and location 390 of the vessel structures" at col. 15, line 61) and characteristic information representing a characteristic unique to a substance at each position represented by the three-dimensional coordinate information ('angiographic data based on the edge volume 80 is advantageous because it retains the vessel lumen information" at col. 8, line 62); and

said cross sectional image generation unit generates an image based on information representing a three-dimensional coordinate position having the characteristic information which satisfies a predetermined condition in the three-dimensional volume data (figure 15, numeral 386; "performs pre-filtering to remove noise or extraneous features such as non-vascular contrast that interferes with the vascular image" at col. 8, line 3), and clarifies the cross section of the tubular tissue in the image ("flood-filled vessel structures" at col. 15, line 55).

Regarding **claim 9**, Suri et al. discloses an apparatus wherein said imaging unit comprises:

a condition changing unit (figure 4, numeral 46) which changes the predetermined condition (the pre-processing conditions will change depending on whether the study type is BBA or not);

an image attribute detecting unit (figure 20) which detects an image attribute which changes in accordance with changes in the predetermined condition ("For each pixel (r,c) of the slice 386 having flood-filled vessel structures, the top four values A,B,C,D around (r,c) are obtained" at col. 16, line 61; as the result of the flood-filling changes depending on the input data, it will change depending on whether the study type is BBA or not); and

a clarification determining unit (portion of figure 16, numeral 400 that conducts figure 21, numeral 542) which determines whether or not the cross section of the tubular tissue is clarified in an image, based on detected changes in the image attribute ("recursive erosion process of FIGS. 20 and 21 is repeated until the final vessel centers are obtained" at col. 17, line 30).

Regarding **claim 10,** Suri et al. discloses an apparatus wherein:

the image attribute represents an area of an image (the pixel values represent the area from which they are extracted as shown in figure 19);

said image attribute detecting unit detects an image area which changes in accordance with changes in the predetermined condition (as the result of the flood-filling changes depending on the input data, it will change depending on whether the study type is BBA or not), and detects a change in the image area corresponding to the changes in the predetermined condition ('add/replacement processor 508 adds one to

the minimum value 506 and replaces the pixel (r,c) with the new value" at col. 17, line 1); and

said clarification determining unit determines whether or not the cross section of the tubular tissue is clarified, based on the detected change in the image area ("transform of equation (13) is repeated 542, 544 for each pixel to produce the eroded image" at col. 17, line 28).

Regarding **claim 11**, Suri et al. discloses an apparatus

wherein said clarification determining unit determines that the cross section of the tubular tissue is clarified in the image (figure 21, numeral 546), when an image appearing in a center of the region including the cross section become fit inside the region, and the change in the image area becomes the largest (figure 17D).

Regarding **claim 12**, Suri et al. discloses an apparatus

wherein said region specifying unit determines a position of a three-dimensional region to be specified next ("selecting 612 advantageously moves a pre-selected distance along the vessel direction" at col. 18, line 15), based on the three-dimensional volume data which is specified by said center line specifying unit and which represents the center line of the tubular tissue ("starting point is optionally selected from the table of vessel center tags" at col. 17, line 63).

Regarding **claim 13**, Suri et al. discloses an apparatus wherein:

said center line specifying unit specifies the center line of the tubular tissue as three-dimensional path data (figure 6C, numeral 126); and

said medical image processing apparatus further comprises an image generating unit (portion of figure 4, numeral 52 that produces figure 23, numeral 96') which generates an image representing the tubular tissue based on the three-dimensional path data specified by said center line specifying unit ("Once the vessel termination is reached, a vascular path 96' is obtained" at col. 18, line 19).

Regarding **claim 15**, Suri et al. discloses an apparatus wherein:

said region specifying unit specifies a predetermined three-dimensional region whose center is an arbitrary point on the predetermined tubular tissue represented by the three-dimensional volume data ("starting point is typically a root of the venous or arterial system of interest, and can optionally be selected manually or identified using an automated system" at col. 17, line 58);

said medical image processing apparatus further comprises an image clarifying unit (portion of figure 5, numeral 70 that conducts figures 20 and 21) which clarifies a three-dimensional image representing only the predetermined tubular tissue in the specified three-dimensional region (figure 15, numeral 80), by changing predetermined characteristic information included in the three-dimensional volume data which constitutes a three-dimensional image obtained by data-conversion of said imaging unit ('add/replacement processor 508 adds one to the minimum value 506 and replaces the pixel (r,c) with the new value" at col. 17, line 1); and

said medical image generating unit generates a predetermined medical image representing the predetermined tubular tissue, by using the three-dimensional image clarified by said image clarifying unit (figure 29, numeral 780).

Regarding **claim 16**, Suri et al. discloses an apparatus wherein:

said image clarifying unit comprises

a closed region detecting unit (figure 20, numeral 512) which detects a closed region which constitutes the three-dimensional image obtained by data-conversion of said imaging unit and which includes a center of the three-dimensional region (figure 17C), and

a clarification determining unit (portion of figure 16, numeral 400 that conducts figure 21, numeral 542) which determines based on the closed region detected by said closed region detecting unit and the three-dimensional region whether or not the closed region represents only the predetermined tubular tissue ("recursive erosion process of FIGS. 20 and 21 is repeated until the final vessel centers are obtained" at col. 17, line 30); and

the closed region which is determined by said clarification determining unit as representing only the predetermined tubular tissue is regarded as the clarified three-dimensional image (figure 17D).

Regarding **claim 17**, Suri et al. discloses an apparatus wherein:

said closed region detecting unit detects a change in the closed region corresponding to changes in the characteristic information (as the result of the flood-filling changes depending on the input data, it will change depending on whether the study type is BBA or not); and

said clarification determining unit determines whether or not the closed region represents only the predetermined tubular tissue, based on changes in the closed

region ("transform of equation (13) is repeated 542, 544 for each pixel to produce the eroded image" at col. 17, line 28).

Regarding **claim 18**, Suri et al. discloses an apparatus wherein:

said region specifying unit specifies a plurality of three-dimensional regions by setting a center of a three-dimensional region to be specified next based on the arbitrary point and/or the clarified three-dimensional image ("starting point is typically a root of the venous or arterial system of interest, and can optionally be selected manually or identified using an automated system" at col. 17, line 58); and

said medical image generating unit generates the predetermined medical image representing the predetermined tubular tissue, by using three-dimensional images clarified in the plurality of three-dimensional regions (figure 29, numeral 780).

Regarding **claim 19**, Suri et al. discloses a medical image processing method for generating an image representing a tubular tissue in a living body by using a computer as executed by the apparatus of claim 1 described in the rejection above.

Regarding **claim 20**, Suri et al. discloses a method wherein said step of extracting information on the tubular tissue includes:

a step of specifying a center position of a cross section of the tubular tissue in each of the plurality of regions specified by said region specifying unit (figure 16, numeral 402), based on the three-dimensional volume data obtained by the volume data obtaining unit (the 3-D edge volume is derived from the volume data acquired beforehand); and

a step of specifying a center line of the tubular tissue in a longitudinal direction of the tubular tissue, based on the plurality of center positions specified by said center specifying unit ("a three dimensional segmented vasculature 96 can be constructed, e.g. by interpolation between the planes 124 and along the vessel centers 126" at col. 9, line 62).

Regarding **claim 21**, Suri et al. discloses a medical image processing method for generating an image representing a tubular tissue in a living body by using a computer as executed by the apparatus of claim 3 described in the rejection above.

Regarding **claim 22**, Suri et al. discloses a method wherein:

in said step of specifying a region, a planar region which orthogonally intersects with the longitudinal direction of the tubular tissue is specified (figure 6B); and

in said step of specifying a center position, a center position of a cross section of the tubular tissue in the specified planar region is specified (figure 6B, numeral 120).

Regarding **claim 23**, Suri et al. discloses a medical image processing method for generating an image representing a tubular tissue in a living body by using a computer as executed by the apparatus of claim 5 described in the rejection above.

Regarding **claim 24**, Suri et al. discloses a medical image processing method for generating an image representing a tubular tissue in a living body by using a computer as executed by the apparatus of claim 6 described in the rejection above.

Regarding **claim 25**, Suri et al. discloses a medical image processing method for generating an image representing a tubular tissue in a living body by using a computer as executed by the apparatus of claim 7 described in the rejection above.

Regarding **claim 26**, Suri et al. discloses a medical image processing method for generating an image representing a tubular tissue in a living body by using a computer as executed by the apparatus of claim 8 described in the rejection above.

Regarding **claim 27**, Suri et al. discloses a medical image processing method for generating an image representing a tubular tissue in a living body by using a computer as executed by the apparatus of claim 9 described in the rejection above.

Regarding **claim 28**, Suri et al. discloses a medical image processing method for generating an image representing a tubular tissue in a living body by using a computer as executed by the apparatus of claim 10 described in the rejection above.

Regarding **claim 29**, Suri et al. discloses a medical image processing method for generating an image representing a tubular tissue in a living body by using a computer as executed by the apparatus of claim 11 described in the rejection above.

Regarding **claim 30**, Suri et al. discloses a medical image processing method for generating an image representing a tubular tissue in a living body by using a computer as executed by the apparatus of claim 12 described in the rejection above.

Regarding **claim 31**, Suri et al. discloses a medical image processing method for generating an image representing a tubular tissue in a living body by using a computer as executed by the apparatus of claim 13 described in the rejection above.

Regarding **claim 33**, Suri et al. discloses a medical image processing method for generating an image representing a tubular tissue in a living body by using a computer as executed by the apparatus of claim 15 described in the rejection above.

Regarding **claim 34**, Suri et al. discloses a medical image processing method for generating an image representing a tubular tissue in a living body by using a computer as executed by the apparatus of claim 16 described in the rejection above.

Regarding **claim 35**, Suri et al. discloses a medical image processing method for generating an image representing a tubular tissue in a living body by using a computer as executed by the apparatus of claim 17 described in the rejection above.

Regarding **claim 36**, Suri et al. discloses a medical image processing method for generating an image representing a tubular tissue in a living body by using a computer as executed by the apparatus of claim 18 described in the rejection above.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 14 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination Suri et al. and Johnson et al. (US 5,891,030).

Suri et al. discloses an apparatus and method wherein said image generating unit comprises:

an image calculating unit which generates plural kinds of images each representing the tubular tissue (figure 23, numeral 616; figure 23, numeral 96'), and calculates relative positional relationships between the images ("finding the extent of the vessel about the vessel center in the plane orthogonal to the vessel direction; (4) locating the next vessel center" at col. 17, line 67).

Suri et al. does not disclose a display control unit which displays the generated plural kinds of images all at once on a predetermined display device, and displays positional relationships on the displayed images by associating the relations based on the relative positional relationships between the images calculated by said image calculating unit.

Johnson et al. teaches medical image processing apparatus and method for generating a medical image by using three-dimensional volume data representing a portion in a living body ("anatomical modeling of the human body with a computer, and more particularly to a computerized system for analyzing tubular structures of the human body" at col. 1, line 8), said apparatus comprising:

a display control unit (figure 3, numeral 48) which displays the generated plural kinds of images all at once on a predetermined display device ("the two dimensional reformatted images and the three dimensional intraluminal image of the structure are dynamically simultaneously displayed to the user on the display device" at col. 6, line 7), and displays positional relationships on the displayed images by associating the relations based on the relative positional relationships between the images ("Fiducial marks shown within each of the displayed views provide three dimensional localization.

As the three dimensional course of the colon is delineated, the colon midline is preferably superimposed over the scout views and intersections with cross sections are displayed" at col. 7, line 9) calculated by said image calculating unit (figure 2, numeral 30).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize the display processing of Johnson et al. to present the image data of Suri et al. as "simultaneous display of cross-sectional and rendered views enhances a diagnostic interpretation more than either cross-sectional or intra luminal views alone" (Johnson et al. at col. 2, line 53).

Response to Arguments

Summary of Remarks (@ response page labeled 17): The Suri reference "clearly reads that the slices are parallel but are not orthogonal with vessel center line".

Examiner's Response: As the Examiner pointed out in the reference, particularly with regard to Figure 6B, the slices are orthogonal to the vessel center line. To further exemplify this point, the Examiner makes reference to col. 9, line 56 which states: "analyzes the orthogonal plane 94 to determine the vessel boundaries 120 (FIG. 6B) in the plane 94".

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KATRINA FUJITA whose telephone number is (571)270-1574. The examiner can normally be reached on M-Th 8-5:30pm, F 8-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571) 272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Katrina Fujita/
Examiner, Art Unit 2624

/Vikkram Bali/
Supervisory Patent Examiner, Art Unit 2624